

REMARKS

Claims 1-4 and 6-16 are pending. Claims 1 and 13 are independent. Claim 1 is amended.

The amendments to claim 1 is not made to avoid the art, in response to statutory matters or intended to narrow the claims. Rather, the amendments are made for clarification purposes only.

Claims 1, 13 and 14 have been rejected under 35 U.S.C. §102(b) as being anticipated by Okumura et al. (U.S. Patent No. 5,015,330). Applicant respectfully traverses this rejection.

Okumura et al. disclose a film forming method and film forming device including a reaction container into which semiconductor wafers are placed for processing. During processing, Okumura et al. disclose placing semiconductor wafer into the container and creating a vacuum in a reaction container. Then, a Si_3N_4 film is formed on each semiconductor wafer by adding a nitrogen plasma gas. Next, the wafers are removed from the reaction container while the purging of the reaction container occurs with a nitrogen purged gas. (See column 11, lines 27-30).

Okumura et al. disclose exposing the inner portions of the container to atmospheric air prior to the removal of the plasma process gas. Therefore, Okumura et al. do not disclose "drawing out the surface treatment gas from the chamber while injecting a nitrogen gas into the chamber," as recited by claim 1 and similarly claim 13 which recites a moisture displacing gas rather than nitrogen.

Accordingly, claims 1 and 13 are allowable over the prior art. Regarding dependent claim 14, this claim is allowable for at least the same reasons as corresponding independent claim 13.

Claims 1, 4 and 5 have been rejected under 35 U.S.C. §102(e) as being anticipated by Kannan et al. (U.S. Patent 6,091,056). Applicant respectfully traverses this rejection.

Kannan et al. disclose a hot plate oven for processing flat panel displays and large wafers. During the wafer processing, hexamethyldisilane (HMDS) is added to the oven chamber under a vacuum. When the addition of HMDS is stopped pure nitrogen is supplied to purge the oven chamber while the chamber is exhausted. (See column 3, lines 1-16).

Therefore, Kannan et al. do not disclose, "drawing out the surface treatment gas from the chamber while injecting a nitrogen gas into the chamber," as recited by claim 1.

Accordingly, claim 1 is allowable over the prior art. Regarding dependent claims 4 and 5, these claims are allowable for at least the same reasons as the corresponding independent claim 1. Therefore, Applicant respectfully requests removal of this rejection.

Claims 2, 3 and 6-8 have been rejected under 35 U.S.C. §103(a) as being unpatenable over Kannan et al. in view of Bellows et al. (U.S. Patent No. 5,728,602).

As discussed above, Kannan et al. fail to teach all the features of claim 1 from which claims 2, 3 and 6-8 depend. Bellows et al. fail to make up for the deficiencies of Kannan et al.

Bellows et al. disclose a semiconductor wafer manufacturing process with high-flow rate low-pressure purge cycles. The process includes putting a process TEOS gas into a furnace to treat a wafer. After treatment, the TEOS gas and its reaction products are evacuated to create a vacuum in the furnace. The furnace is then backfilled with nitrogen.

When the nitrogen is added to the furnace, there are gases remaining in the furnace. Therefore, Bellows et al. do not teach “drawing out the surface treatment gas from the chamber while injecting a nitrogen gas into the chamber,” as recited by claim 1.

Accordingly, claims 2-3 and 6-8 are allowable over the prior art for at least the same reasons as corresponding independent claim 1.

Claims 15 and 16 have been rejected under 35 U.S.C. §103(a) as being unpatenable over Okumura et al. In view of Kannan et al. and Bellows et al. Applicant respectfully traverses this rejection.

As discussed above, Okumura et al. fails to teach all the features of independent claim 13. Also as discussed above, Kannan et al. and Bellows et al. have similar deficiencies to Okumura et al. Therefore, Kannan et al. and Bellows et al. do not make up for the deficiencies of Okumura et al.

Accordingly, claims 15 and 16 are allowable for at least the same reasons as corresponding independent claim 13.

Claims 9-12 have been rejected under 35 U.S.C. §103(a) as being unpatenable over Kannan et al. in view of the prior art of Applicants’ disclosure on pages 1-4. Applicant respectfully traverses this rejection.

As discussed above, Kannan et al., fails to teach every feature of independent claim 1 from which claims 9-12 depend. The Examiner relies on Applicants' own disclosure as making up for the deficiencies of Kannan et al. However, Applicant has not admitted that the information contained on pages 1-4 of the disclosure is actually "prior art" is a term of art within the patent field and has a specific meaning. If Applicant was aware that pages 1-4 and Figs. 1 and 2 contained prior art, Applicant would have labeled Fig. 1 and Fig. 2 as such. Rather, Applicant has labeled Figs. 1 and 2 as "Background Art" which does not denote "Prior Art" because Applicant is not aware that pages 1-4 contain prior art.

Even assuming *arguendo* that pages 1-4 are prior art, pages 1-4 do not make up for the deficiencies of Kannan et al. In particular, page 3, lines 23 and 24 state that the pressure within the adhesive chamber is equalized to atmosphere pressure by allowing air to enter the chamber.

Accordingly, claims 9-12 are allowable for at least the same reasons as independent claim 1 from which they depend. Therefore, Applicant respectfully requests removal of this rejection.

CONCLUSION

In view of the above amendments and remarks, reconsideration of the rejection and allowance of claim 1-4 and 6-16 are respectfully requested.

Attached hereto is a marked-up version of the changes made to the application by this Amendment.

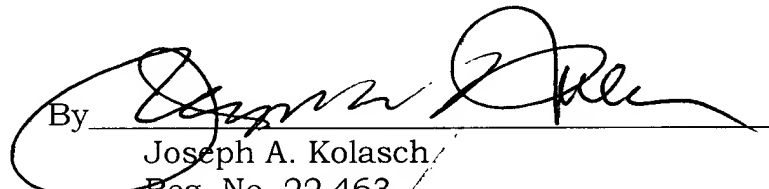
Applicant respectfully petitions under the provisions of 37 CFR 1.136(a) and 1.17 for a one-month extension of time in which to respond to the Examiner's Office Action. The Extension of Time Fee in the amount of \$110.00 is attached hereto.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to contact the Jayne Saydah (Reg. No. 48,796) at (703) 205-8000, in the Washington, D.C. area.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By 
Joseph A. Kolasch
Reg. No. 22,463

JAK/JES/ndb:sld

P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claim 1 has been amended as follows:

1. (Amended) A method of preventing generation of particles in a chamber, the method comprising:

mounting a substrate within a chamber of a gas-exposure equipment;

decreasing a pressure within the chamber;

injecting a surface treatment gas into the chamber, the surface treatment gas converting a surface of the substrate into an organic material; and

drawing out the surface treatment gas from the chamber while injecting a nitrogen gas into the chamber.

Claim 5 has been canceled.